

WHAT IS CLAIMED:

5 1. A method of generating an outline of a two-dimensional region, comprising the steps of:

10 (a) defining a two-dimensional region within a two-dimensional array containing elements represented by a first axis and a second axis that is non-collinear with said first axis;

15 (b) defining a morphological mask having at least two dimensions and having at least one element, said morphological mask having at least one set element and at least one test element;

20 (c) defining a two-dimensional output array corresponding to said two-dimensional array containing said region;

25 (d) orienting said morphological mask with respect to said two-dimensional array containing said region;

30 (e) computing a result based on the properties of said at least one set element of said morphological mask and the corresponding elements of said two-dimensional array containing said region, the result being to turn off the test elements of said morphological mask if and only if a condition selected from the group of conditions consisting of all of the set elements of the mask are in positions corresponding to elements of the region and none of the set elements of the mask are in positions corresponding to elements of the region is true, and the result being to set the test elements of the morphological mask otherwise;

35 (f) plotting the computed result in the two-dimensional output array at one or more elements corresponding to said at least one test element of said morphological mask; and

(g) repeating steps (e) and (f) while moving said morphological mask stepwise along said first axis and said

5 second axis over the portion of the two-dimensional array containing said region until every element of said region has been analyzed.

2. The method of claim 1, wherein said first axis and said second axis representing elements within the two-dimensional arrays are rows and columns.

10 3. The method of claim 1, wherein said two-dimensional arrays are video frames.

4. The method of claim 1, further comprising the plotted result as a computer-readable file.

15 5. The method of claim 1, wherein the morphological mask comprises a square having an odd number of elements, and the test element is the center element.

6. The method of claim 5, wherein the elements of the morphological mask are pixels.

7. A method of generating an outline of at least one two-dimensional region, comprising the steps of:

20 (a) defining a plurality of two-dimensional regions within a two dimensional array containing elements represented by a first axis and a second axis that is non-collinear with said first axis;

25 (b) defining a morphological mask having at least two dimensions and having at least one element, said morphological mask having at least one set element and at least one test element;

30 (c) defining a two-dimensional output array corresponding to said two-dimensional array containing said plurality of regions;

(d) selecting at least one of said plurality of regions, each of said selected regions to have an outline generated therefor;

5 (e) orienting said morphological mask with respect to said two-dimensional array containing said plurality of regions;

10 (f) computing a result based on the properties of said at least one set element of said morphological mask and the corresponding elements of said two-dimensional array containing said plurality of regions, the result being to turn off the test elements of said morphological mask if and only if a condition selected from the group of conditions consisting of all of the set elements of the mask are in positions corresponding to elements of said at least one selected region and none of the set elements of the mask are 15 in positions corresponding to elements of said at least one selected region is true, and the result being to set the test elements of the morphological mask otherwise;

20 (g) plotting the computed result in the two-dimensional output array at one or more elements corresponding to said at least one test element of said morphological mask; and

25 (h) repeating steps (f) and (g) while moving said morphological mask stepwise along said first axis and said second axis over the portion of the two-dimensional array containing said at least one selected region until every element of said at least one selected region has been analyzed.

8. The method of claim 7, wherein said first axis and said second axis representing elements within the two-dimensional arrays are rows and columns.

30 9. The method of claim 7, wherein said two-dimensional arrays are video frames.

10. The method of claim 7, further comprising recording the plotted result as a computer-readable file.

1 **52366/JEC/G476**

5 11. The method of claim 7, wherein the morphological
mask comprises a square array having an odd number of
elements, and the test element is the center element.

12. The method of claim 11, wherein the elements of the
morphological mask are pixels.

10

15

20

25

30

35